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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,098	10/26/2001	Suzanne D. Rogers	788190/98002US	7520

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EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 08/27/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/069,098

Applicant(s)

ROGERS, SUZANNE D.

Examiner

Medina A Ibrahim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 34-39,56-61,82-87 and 108-113 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

- 6) ☒ Claim(s) 34-39,56-61,82-87 and 108-113 is/are rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Group III in Paper No. 6 filed on 06/04/03 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The restriction requirement is made Final.

It is noted that the restriction/election response due date was inadvertently omitted in the Office action Summary of the restriction/election mailed on 3/25/03. Any inconvenience is regretted. Applicant should note that the shortened statutory period is set to expire one month from the mailing date of the communication.

Claims 34-39, 56-61, 82-87 and 108-113 are pending and are under examination.

### ***Drawings***

The drawings filed on 10/26/01 are approved by the Examiner.

### ***Title***

3. The title is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title should reflect that the claimed invention is drawn to a method of regenerating freshwater wetland monocot plants.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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1. Claims 34-39, 56-61, 82-87 and 108-113 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 is indefinite because "freshwater monocot plant" lacks antecedent basis in claim 34. It is suggested that "claim 34" be replaced with ----claim 35---.

Claim 37 is indefinite because "freshwater wetland monocot plant" lacks antecedent basis in claim 34. It is suggested that "claim 34" be replaced with ----claim 36---.

Claim 58 is indefinite because "freshwater monocot plant" lacks antecedent basis in claim 56. It is suggested that "claim 56" be replaced with ---claim 57---.

Claim 59 is indefinite because "freshwater wetland monocot plant" lacks antecedent basis in claim 56. It is suggested that "claim 56" be replaced with ----claim 58---.

Claim 85 is indefinite because "freshwater monocot plant" lacks antecedent basis in claim 82. It is suggested that "claim 82" be replaced with ----claim 83---.

Claim 86 is indefinite because "freshwater wetland monocot plant" lacks antecedent basis in claim 82. It is suggested that "claim 82" be replaced with ----claim 84---.

Claim 110 is indefinite because "freshwater monocot plant" lacks antecedent basis in claim 108. It is suggested that "claim 108" be replaced with ----claim 109---.

Claim 111 is indefinite because "freshwater wetland monocot plant" lacks antecedent basis in claim 108. It is suggested that "claim 108" be replaced with ---- claim 110---.

Claims 34, 56, 82 and 108 are indefinite for lacking correlation between the preamble and the last method step. The claims also lack the steps of inducing shoot and root development. Dependent claims 35-39, 57-61, 83-87 and 109-113 are included in the rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 34-38, 56-61 and 82-86 are rejected under 35 U.S.C. 102(b) as being anticipated by Zimmermann et al (HortScience, vol. 21(15), pp. 1214-1216, 1986, Applicant's IDS).

The claims are directed to a method for regenerating a plant including the freshwater wetland monocot plant of *Typha* species comprising providing a sample of a plant, inducing shoot and root development from said sample. The claims are also drawn to regenerating a plant by inducing shoot and root development through callus.

Zimmermann et al teach methods for regenerating three *Typha* species from callus cultures, the method comprising initiating callus from explants of immature

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inflorescence segments, initiating shoots and roots from said callus (see at least Fig. 2 and Table 2). All claim limitations are disclosed by Zimmermann.

4. Claims 34, 56, 82 and 108 are rejected under 35 U.S.C. 102(b) as being anticipated by Saxena et al (U.S. 5, 477, 000).

5. Claims are drawn to a method for regenerating a plant by inducing shoot and root development from a sample of a plant, or by forming a callus from a sample of a plant and then inducing root and shoot development from said callus, or by forming a callus from a sample of a plant, then inducing shoot development from said callus, and inducing root development from said shoot. The claims are also drawn to a method of regenerating a plant or forming somatic embryos.

6. Saxena et al teach methods of regenerating plants from tissue cultures of explants via organogenesis and somatic embryogenesis. Saxena teaches isolation of an explant from a seedling, and culturing the explant on medium supplemented with growth regulators to allow growth and differentiation. Saxena teaches explants which are differentiated into shoots which later develops roots to produce a complete plant and vice versa, and explants differentiated into somatic embryos which have both shoot and root initials and are capable of developing into whole plants (see at least columns 1-4, 11-12, and Examples 1-4). Note the method steps are incomplete (see 112, 2<sup>nd</sup> rejection). Therefore, Sexane discloses all claim limitations.

7. Claims 34-37, 56-59 and 82-85 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al (WETLANDS, Vol. 16, No. 4, pp. 410-415, 1996, Applicant's IDS).

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Claims are drawn to a method for regenerating a freshwater wetland emergent monocot plant comprising providing a sample of said plant, forming a callus from said sample, inducing shoot development from said callus to form at least one shoot, and inducing root development from said at least one shoot.

Li et al teach a method of regenerating *Spartina cynosuroides*, a freshwater wetland emergent monocot plant, the method comprising initiating callus from the mesocotyl of seedling grown on a culture medium, inducing shoot development from said callus to form shoot by transferring the callus to shoot regeneration medium, and inducing root development from the shoots by transferring larger shoots to root regeneration medium, wherein the regenerated plants set viable seeds (see pages 411-412, Methods and Materials). Therefore, all claim limitations are taught by the cited reference.

Claim 108 is rejected under 35 U.S.C. 102(b) as being anticipated by Nehra et al (US 5, 589, 617, (A)).

The claim is directed to a method for regenerating a plant or forming a somatic embryo comprising providing a sample of a plant, forming a callus from said sample, and inducing the formation of a somatic embryo from said callus.

Nehra et al teach a method of forming somatic embryos using different segments of scutellum of wheat and barley for culture, and development of callus and somatic embryos from said segments and regeneration of plants from wheat somatic embryos (Figs. 2 and 3). Nehra discloses all claim limitations.

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8. Claims 34-38, 56-60, 82-87 are rejected under 35 U.S.C. 102(a) as being anticipated by Sarma et al (Plant Cell Reports, 1998, 17:656-660, Applicant's IDS).

Claims are drawn to a method for regenerating a freshwater wetland emergent monocot plant including the emergent wetland monocot *Juncus accuminatus* comprising providing a sample of said plant, forming a callus from said sample, inducing shoot/root development from said callus or inducing shoot development from said callus to form at least one shoot, and inducing root development from said at least one shoot.

Sarma et al teaches methods for regenerating plants of *Juncus accuminatus* comprising initiating callus from *Juncus accuminatus* seedling, differentiating the callus into shoots, inducing roots from regenerated shoots by supplementing the growth medium with root growth regulators to form plants. Sarma teaches that all the regenerated plants set viable seeds (see the whole document, especially Methods and Materials). Sarma teaches all claim limitations.

9. Claims 34-38, 56-61, 82-86 are rejected under 35 U.S.C. 102(a) as being anticipated by Rogers et al (Plant Cell Reports, 1998, 18: 71-75, Applicant's IDS).

Rogers teach a method of regenerating plants of *Typha Latifolia* comprising inducing callus, followed by shoot and root induction from the callus, and regenerated *T. latifolia* plants with viable seeds (see page 71-72, Materials and Methods, and Fig. 1). Rogers teach all claim limitations.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 34-39, 56-61 and 82-87 rejected under 35 U.S.C. 103(a) as being obvious over Sarma et al (above).

Claims are drawn to a method for regenerating a freshwater wetland emergent monocot plant including the emergent wetland monocot *Juncus accuminatus* and *effuses*, *Carex lurida* and *Scirpus polyphyllus* comprising providing a sample of said plant, initiating a callus from said sample, inducing shoot/root development from said callus or inducing shoot development from said callus to form at least one shoot, and inducing root development from said at least one shoot.

The teachings of Sarma et al have been discussed supra. While Sarma does not explicitly teach regeneration of plants of *Juncus effuses*, *Carex lurida*, *Scirpus polyphyllus*, and *Typha*, Sarma does suggest the importance of *Juncus effuses* and *Typha*, and the need of tissue culture for said plants (page 656, last full paragraph of column 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the *Juncus accuminatus* regeneration method taught by Sarma by incorporating *Juncus effuses* plant, to develop a reliable regeneration method. One skilled in the art would have reasonable expectation of success, given the successful regeneration of a related plant species as taught by Sarma. One would have been motivated to do so given the importance of *Juncus* species and other freshwater wetland monocot plant species in environmental cleanup. Thus, the invention as whole

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was a *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

**Remarks**

Claims 109-113 are deemed free of the prior art, given the failure of the prior art to teach or suggest a method of regenerating freshwater wetland monocot plant via somatic embryogenesis.

No claim is allowed.

Papers related to this application may be submitted to Technology Sector 1 by facsimile transmission. Papers should be faxed to Crystal Mall 1, Art Unit 1638, using fax number (703) 308-4242. All Technology Sector 1 fax machines are available to receive transmission 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Medina A. Ibrahim whose telephone number is (703) 306-5822. The Examiner can normally be reached Monday-Thursday from 8:30AM to 5:30PM and every other Friday from 9:00AM to 5:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

8/22/03

mai

Medina A. Ibrahim